

### Amendments to the Specification:

Please replace the paragraph at page 15, line 16 through page 16, line 8 with the following amended paragraph:

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A1 The examples provided above, i.e., impedance sensing and ultrasonic sensing, rely on active sensors to measure structural characteristics. The present invention may also, however, be used in passive modes to detect structural damage. In certain of ~~there~~ these embodiments, a plurality of sensors is disposed in a predetermined orientation relative to each other and at known positions on the structure. The sensor outputs are monitored intermittently or continuously, even though the sensors may not be engaged in either of the active measurement procedures described above. Damage events may be identified through the reception of stress waves generated in the structure through impacts or other material disruptions. Certain waves may, for example, indicate an occurrence of a low-velocity impact. The sensor may also, however, detect acoustic emission signals that indicate damage has occurred. By determining and recording the location and time of damage events, a record may be compiled to predict the structure's remaining operative life.

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Please replace the paragraph at page 19, line 17 through page 20, line 4 with the following amended paragraph:

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A2 For impedance sensing, an adjustable-voltage-power gain-phase impedance analyzer 46 excites the transducers, which output measurement information back to analyzer 46. Analyzer 46 includes software ~~algorithms~~ algorithms to analyze the sensor data to determine the locations and orientation of damage features as described above. Alternatively, analyzer 46 may forward the data to computer 38 for analysis. Generally, computer 38 houses the system's software components, the operation of which is generally described above and which may include non-destructive evaluation and imaging software package 48, monitoring diagnostics and analysis software package 52 and/or artificial intelligence, neural-network and data mining software 54.

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